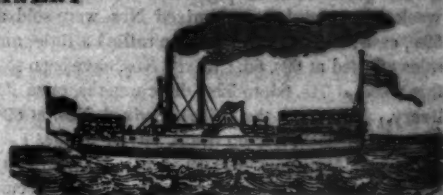


AMERICAN RAILROAD JOURNAL, AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY
AND MINES.



ESTABLISHED 1831.



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SATURDAY, AUGUST 28, 1847.

[WHOLE No. 584, VOL. XX.]

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

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AMERICAN RAILROAD JOURNAL.

PUBLISHED AT 105 CHESTNUT ST. PHILADELPHIA.

Saturday, August 28, 1847.

Auburn and Rochester Railroad.

We have received the following statement in relation to this road. It is gratifying to know that the company is doing so well—and especially to learn that they are relaying the road with heavy iron.—Such a course will soon be—if it is not already—absolutely necessary, that higher speed and heavier freights may be the order of the day. The time is at hand when a large amount of freight must pass over this road.

Office of the Auburn and Rochester R. R. Co.
Canandaigua, August 7, 1847.

Sir: Herewith we send you a statement of the receipts and expenses of operating our road for the last six months, by which you will perceive that after paying a semi-annual dividend of 4 per cent. to our stockholders, on the 1st instant, we have over, of the six months' profits, \$52,327 35 to add to our account of surplus profits, making said account now good for \$261,961 29.

We have commenced relaying the road with a heavy iron rail, 60 pounds to the yard. We intend to complete 20 miles this summer, 30 miles next season, and the remaining 28 miles in the summer of 1849. The funds necessary for this object are procured (by the issue of new stock, taken up on the line of the road, and bonds convertible into stock,) within two hundred and fifty thousand dollars of the full amount required to complete the relaying, etc.,

of the entire road, from Auburn to Rochester, 78 miles. This amount of stock we can at any time get taken up in the country, but for the present we shall not dispose of it.

The cost of the road up to the 1st inst., is \$1,880,749 60. When completed with the iron rail, it will have cost, including depots, machine shops, store houses, locomotives, passenger cars, freight cars, etc, two millions and a half of dollars.

Yours respectfully,
HENRY B. GIBSON, President.

CHARLES SEYMOUR, Treasurer.

1847, February 2, surplus.....	\$109,633 94
Receipts in February, 1847.....	13,995 89
" March, ".....	17,601 87
" April, ".....	34,285 80
" May, ".....	39,637 16
" June, ".....	36,842 38
" July, ".....	42,538 16
Mail services for six months.....	5,850 00
	\$300,385 20

1837, August 2, surplus profits.....	\$161,961 29
Expenses in February, 1847.....	\$11,736 50
" March, ".....	12,684 40
" April, ".....	11,915 96
" May, ".....	11,474 43
" June, ".....	10,569 97
" July, ".....	8,855 51
Disbursements by treasurer.....	3,005 04
Emigrant service.....	1,432 10
Interest on State stock to 1st July.....	5,500 00
Interest on bonds to 1st inst.....	5,250 00
Dividend paid 1st August, 1847, say four per cent. for six months.....	56,000 00
Balance to new account.....	161,961 29
	\$300,385 20

Baltimore and Ohio Railroad Termination.

At a meeting of the Stockholders of this road, on the 25th inst., it was decided to accept of the law of the last Legislature of Virginia, which authorizes its construction through that State, on condition that Wheeling is made the terminus.

The question of terminus has cost this company a great deal of trouble—and a large outlay of capital. They have been for years arrested in their progress, and the business community has been taxed millions of dollars, in time and money, for want of a railroad from Cumberland to the Ohio river.

This delay ought not to have occurred; but the company has been dependant upon foreign legislation—that is, the legislation of States having rival interests—and therefore it has had difficulties, far

greater than the mountains in their path, to overcome. They have at length accepted the only route open to them; and, even if it is not the best that could be found, it is to be hoped that it will be completed at an early day, and that it will be found far better than is anticipated even by its warmest friends.

Coal Trade.

We have been furnished with the following statement of the coal sent to market by the Schuylkill canal—which we shall publish as furnished weekly. SCHUYLKILL NAVIGATION.—Week ending August 19th, 1847.

	Tons.	cwt.
Pottsville and Port Carbon.....	6,144	03
Schuylkill Haven.....	1,322	11
Port Clinton.....	00	00
This week.....	7,366	14
Previously.....	114,591	00
Total.....	121,956	14

Railway Traffic.

"From our official returns," says the Railway Chronicle of July 24th, "it appears that the amount of traffic for the last week, on upwards of 3,153 miles of railway, was £185,955, thus accounted for: £106,542 for the conveyance of passengers only, £40,264 for the carriage of goods, and a remainder of £39,149 for passengers and goods together, not respectively apportioned; being an increase of 25,165 over the corresponding week of last year, when the mileage was about 2,290."

From this it appears that 864 miles of road have been brought into use during the past year—or more than one-fourth part of the railroads in the kingdom from which returns of traffic have been made.

Extracts from our Foreign Papers.

We have received, by the Cambria, our regular supply of English railway and mining papers, from which we make the following extracts:

The Iron Trade.—The price of rails, July 23d, was quoted at £9 per ton. A correspondent of the Mining Journal says that "a good demand continues for Welsh bars, and price is very firm. Scotch pig has fluctuated a little this week; but the transactions have been limited, and holders will not take less than 70s. for mixed Nos. In Swedish iron and steel very little doing since last Mining Journal."

Glasgow Pig Iron Trade, July 23.—"Since date of last Mining Journal, a fair amount of business has been done. The fluctuations in price have been frequent, but inconsiderable in extent. Sales of

mixed Nos. have been made at 70s. and 71s.—cash in 14 days. There is less inquiry to-day than for some days past. For mixed Nos. the price may be quoted nominally 70s. cash—free on board."

On the 30th the quotations for rails was the same as on 23d, £9 average, and other kinds "remain without change as to prices, but the demand is not so good as it was about two weeks since; of Swedish iron and steel no recent sales."

Glasgow Pig Iron Trade, July 29.—We have had a very quiet week in pig iron; at the end of last week prices receded, and mixed Nos. were sold at 69s. cash; the market has since rallied a little, and sales effected at 69s. 6d.; mixed Nos. have been sold this week at 71s. 6d. to 72s. three months, open delivery. We quote the price of mixed Nos. at 69s. 6d. to 70s.—cash, free on board, buyers at 69s.

Railway Engineers in Parliament.—The Railway Record says that "the first railway engineer elected into parliament is Mr. Locke, for Hoxton."

"Mr. Booth's suggestion for adopting uniformity of time is likely to be practically realized soon.—The electric telegraph company are now making arrangements to communicate the true time, as observed at the Royal Observatory at Greenwich, to every station on the various lines of railway where the company has a telegraph station, and, of course, to all large towns throughout the kingdom."

Cost of an Excursion from London to Baden, Brussels, Paris, and back to London.—We find the following statement in Herapath's Journal of July 31st: "In the Bologne Gazette there is a statement showing the fares for conveying one person, and the charges for luggage in a journey from London to Baden-Baden, and from the latter via Brussels, to Paris, and thence back to London. Miles travelled 1514; time occupied in travelling, 111½ hours;—fares, £10 10s. 6d.; charge for luggage, £1 7s. 6d.—total, £11 18s. There were from 90 to 96 pounds of luggage carried. No luggage was allowed free on either the Belgian or German lines. On the French Northern luggage of 60 lbs. was, but all in excess charged."

This is less than two pence per mile.

London and York Railway.—It is said that 150 miles of this line will be opened for traffic in the next year.

Railway Bills Sanctioned by the Queen.

"On Thursday, 23d July," says Herapath, "53 railway bills received the royal assent; these, with the 136 previously sanctioned, make 189 railway bills which have received the royal assent during the session of 1847. The aggregate capital authorized to be raised by those bills amounts to £26,156,735, and the loan to £8,611,011—total £34,767,746. The aggregate number of miles thus authorized to be constructed is 1,415, chiefly consisting of short branches."

Railroad from Springfield (O.) to Columbus.

A reconnaissance of so much of this proposed road, says the Springfield Republican, as lies between Springfield and London, was made by an engineer, accompanied by Mr. Forrer, of Dayton, and other gentlemen, during the past week. The route was found very favorable. Passing up the valley of Mill Run about two miles, the route strikes the section line south of Springfield, on a ridge between Beaver Creek valley, and the waters of the Little Miami. This line may be travelled with but a single slight variation on the Darby Plains very little north of London. This route will be surveyed without delay, and an estimate made of the cost of construction.

Locomotive Engines and Cars on the Different Railroads in the United States.

In reply to our request in the Journal of 24th ult., we have been furnished with the following tabular statement of the names and length of the railways in the State of New York, together with the number of locomotives and cars employed on them January 1, 1847.

NAMES OF RAILWAYS.	Length of road.	No. of locomotives.	No. of passenger cars.	No. of freight cars.	No. of mail, baggage and other cars.	Total No. of cars.
Mohawk and Hudson.....	*17	6	1	36		37
Tica and Schenectady.....	*78	15		100		100
Syracuse and Utica.....	*53	9	9	40		49
Auburn and Syracuse.....	*26	4		23		22
Auburn and Rochester.....	*78	10		28		28
Tonawanda.....	43½	6	8	40	8	56
Attica and Buffalo.....	31½	4	6	32	4	42
Buffalo and Niagara Falls.....	22	3	12	4	2	18
Saratoga and Schenectady.....	22	3	4	8	2	14
Schenectady and Troy.....	20½	3	7	40	3	50
Rensselaer and Saratoga.....	25	2	15	11	2	28
Long Island.....	96	15	22	10	21	56
Cayuga and Susquehanna.....	30	1	4	13	2	19
Albany and West Stockbridge.....	38½	none.	none.	none.	none.	none.
Hudson and Berkshire.....	31	4	3	40	2	45
Troy and Greenbush.....	6	3	3	17	2	22
New York and Erie.....	62	9	9	66	60	135
New York and Harlem.....	42	8	42	21	5	68
Lockport and Niagara Falls.....	22	2	8	8	2	18
Lewiston.....	6	none.	6	5	2	13
Skeneateles.....	5	none.	1	1	1	3
* Undivided interest of 5 roads in 70 cars, viz.....			52		18	70
Total.....	754½	107	212	542	139	893

Engineer's Office of Great Western Railway, Hamilton, July 30, 1847.

DEAR SIR: In your Journal of 24th instant, you ask, "How many cars, passenger and freight, are there on the American railways?" Above I send you a statement, which I believe to be correct, of the number of locomotives and cars on all the railways of the State of New York, January 1st, 1847. I hope some one will give those in other States, as it would be interesting to know the whole number.

With respect, yours, etc.

C. B. STUART.

This is precisely what we wanted in relation to the roads in the State of New York—for which we are much indebted to Mr. Stuart, who has so promptly responded to our call, in the midst of his arduous duties as engineer of that important work, the 'Great Western (Canada) Railway.' We shall be equally obliged to other friends who may prepare similar statements in relation to other States, or for individual roads, and we will perform our part of the work by including them in our next edition of the 'Table of Railroads in the United States,' should we be successful in getting returns from roads holding a majority of engines and cars in use.

For the American Railroad Journal.

The First Locomotive.

I have a small volume, copies of which, though it was published no longer ago than 1813, are now extremely rare. It is entitled "Patent Right Oppression Exposed." The text which is ironical, and in burlesque verse, is probably from the pen of Richard Folwell, the publisher. The notes, which at this day, alone give interest to the work, were evidently prepared by Oliver Evans. A few of these notes I shall proceed to extract.

"The principles on which steamboats and steam wagons may be driven, were discovered by Mr. Evans in 1773. Some years afterwards he applied to the legislature of Pennsylvania, to secure him the right for twenty-five years, in which application he was directed and assisted by his friend, George Latimer, Esq., but they notwithstanding treated his memorial as if they thought him insane. He then applied to the legislature of Maryland, where, through the influence of Jesse Hollingsworth, Esq., then one of its members, he obtained a patent for fourteen years, which, however, was too short a period, or people of wealth were not sufficiently acquainted with the principles, to be interested in making the experiment, and his own circumstances were so straitened as not to admit it."

"In this petition he did not include steamboats, because Ramsey and Fitch were at

that time contending about their originality of invention in the application of such engines as were then known. Besides, he entertained an opinion that the western waters were those only where steamboats would be highly useful."

From this statement, it appears that Mr. Evans discovered in 1773, "the principles on which steamboats and steam wagons may be driven," though it was not till 1786 or 1787 that he made his application to the legislature of Pennsylvania. Seventeen years afterwards, as appears from the following extract, he succeeded in propelling by means of steam a very lumbering vehicle on dry land.

"Mr. Evans constructed for the Board of Health, Philadelphia, 1804, at the corner of Ninth and Market streets, a machine for cleaning docks. It consisted of a heavy flat, with machinery to be wrought by a steam engine, the cylinder of which was only five inches diameter, stroke of piston nineteen inches; the weight of the whole complete was equal to that of two hundred barrels of flour. This he conceived to be a fine opportunity to convince the public that his steam engine would propel both carriages and boats. He at the expense of two hundred and fifty dollars, to try the experiment, made wheels and other temporary machinery, with wooden axles, to apply the power of this little engine, with which he propelled this great weight up Mar-

ket street, and round the circles where the water works are set,* and onward into the Schuylkill, about a mile and a half."

This, is, I believe, the first instance on record, of a carriage propelled by steam on dry land. If I am wrong, you, Mr. Editor, can set me right. If I am right, let justice be done to the memory of Oliver Evans.

The narrative proceeds as follows:

"He then applied a paddle wheel in a temporary manner, and propelled it (the flat) down the Schuylkill and up the Delaware to the city, a distance of sixteen miles, leaving all the vessels that were under sail at least half way, (the wind being ahead,) in the presence of thousands of spectators, which he supposed would convince them of the practicability of both steam carriages and steamboats. But in this he was sadly disappointed, for they made no allowance for the disproportion of the engine to its great load, nor for the temporary manner in which the machinery was fixed, nor the great friction, ill form of the boat, and but supposed it was the utmost he could do."

I will give a few extracts from another part of this volume. They are introduced in the original in the form of a prophesy.

"The time will come when people will travel in stages moved by steam engines, from one city to another, almost as fast as birds can fly, fifteen or twenty miles an hour."

"A carriage will set out from Washington in the morning, the passengers will breakfast at Baltimore, dine at Philadelphia, and sup at New York, the same day."

"To accomplish this, two sets of railways will be laid, so nearly level as not to deviate more than two degrees from a horizontal line—made of wood or iron."

When, in the year 1813, these prophesies were uttered, the author must have been regarded by most of his contemporaries as a madman. It is needless to observe how nearly to the letter his prophesies have been fulfilled.

To the Americans, the world is indebted for the first steamboat. It was not the fault of Oliver Evans that the world is not indebted to the Americans for the first railroad also.

W. M. G.

Washington City, D. C., Aug. 18, 1847.

We are obliged to the writer of the foregoing communication, for this opportunity of reminding those, who now enjoy the reality of the predictions of Oliver Evans, to whom they are so much indebted as one of the pioneers in the great work of applying steam to navigation, not only on the water, but also on land.

Watertown, Rome and Cape Vincent Railroad.

We have not heard much in relation to this railroad for many months past, but the following excellent letter, addressed to a gentleman in Watertown, by a *Bostonian*, in relation to this particular road, and railroads in general, is so truth-like, and applies so well to many other localities, and proposed railroads, that we give it entire.

The road here referred to is designed to open a communication from Cape Vincent on the St. Lawrence, through Watertown, to Rome, there to connect with the line from Buffalo to Albany—and thus

* The water works here alluded to were at the intersection of Broad and Market streets.

open a communication direct with the "Black river country," lake Ontario and Canada.

The writer of this letter speaks from personal knowledge on most of the points—and his advice is so good, and so applicable to many other sections, that we should like it much better if we could put the Railroad Journal containing it into the hands of every property holder in the Union.

"The following letter," says the Northern State Journal, "is from a gentleman in Boston, of high standing and long experience in everything relating to the character and influence of railroads on the various interests of New England, and is in answer to one from a gentleman of this place. The public are requested to give it a careful perusal. Its doctrines are sound, the authority is unquestionable, and it relates to a subject of vital interest to this country. Let us one and all arouse from our lethargy, and by one noble effort accomplish this great object. The God of Nature has bestowed his good gifts upon this country with a bountiful hand, and if we are just to ourselves this will soon become one of the most desirable portions of the Union."

DEAR SIR. Your favor of the 3d of August was duly received, and I hasten to answer the various questions it presents.

You ask me to state what connection I have had with railroads. Let me reply that, although a member of the legal profession, I have for the past twelve years been engaged in the direction of steamboats and railroads, and for seven years been closely connected with several of the most important enterprises of the State.

Early in 1840 I was chosen director of the Western railroad, and appointed chairman of the committee which in that year visited Albany, secured the bonds of the city, and planned the extension of the Western railroad to the Hudson. For the four following years I was in the direction of that enterprise, while it struggled through the mountains of Berkshire. Subsequently I have been director of the Fitchburg and Montreal railroad, the first of which is in most successful operation, while the second is expected to be set in motion the present fall. Having taken an active part in conducting these enterprises, owning a country seat between the Fitchburg and Worcester lines, over both of which I pass often in summer, and acting as counsel also in cases of nearly all our lines of railroad, I have enjoyed an opportunity to test the effects of a railroad on the farms and villages of our State.

Although I feel a deep interest in the progress of my native State, and I trust a laudable pride in her rapid advancement, I trust that I do not forget that I am a citizen of the Union, and can permit no State lines to limit my philanthropy, or restrain me from communicating any light I have derived from my position. You ask me if railroads are monopolies. At first our lines were not conducted on the most liberal spirit. Our early directors were timid, and the charges were fixed at four cents per mile for passengers, and eight cents for freight. I have ever been a zealous advocate for low prices, as alike beneficial to the lines and the public. For a long time I wrote and urged the point. I was met at first by incredulous smiles and determined resistance, but argument and ex-

perience at length prevailed. Four years since our rates were reduced nearly one-half, and ever since an increasing prosperity has attended all our lines. Villages are growing up at every station, farms improving and rising in value, and our lines are now conducted in a most accommodative spirit. If monopolies, they are most liberal monopolies, for the tendency of rates is certainly diminished, and the accommodation of the public in speed, cars, depots and frequent trains, is annually increasing. Around the depot at West Newton a large village is growing up, and land has risen from \$50 per acre to prices varying from \$200 to \$1000 per acre. At Fitchburg the population has risen in three years from 3000 to 6000 souls—the effect of the railroad alone. Milk is now carried 45 miles, from Leominster to Boston, and a train of five milk cars attached to the passenger cars, arrives every morning at the Charlestown depot.

Under the influence of railroads, and of manufactures stimulated thereby, the old Bay State has ceased to be an emigrating State. It receives more than it sends forth, and will show by the next census nearly if not quite a million of inhabitants on 700 square miles of rugged land, smiling under the hand of untiring industry, and sparkling with new and beautiful structures.

You ask me to compare railroads with canals. Let me reply that the former are in almost every particular superior. Give me a good and untrammelled line of railroad beside your Erie canal, and its branches, and successful as it now is, I think I would engage to divert its traffic in five years, and leave it without patronage sufficient to keep it in repair. In New York you have as yet enjoyed no perfect lines of railroads. I cannot regard a line with a strap rail, nearly incompetent to carry freight, like that from Buffalo to Albany, as a railroad. Thank heaven we have none of them here. A true railroad is susceptible of a speed of 40 miles per hour, and its capacity reaches to millions of tons and millions of passengers to pass over it annually.

It can live, too, where a canal must perish for want of business. A railroad costing but \$18,000 per mile, can live upon a line which sustains but four daily stages, and ten daily baggage wagons in each direction, and pay large dividends; but a district with this business at ordinary tolls, would not keep a canal in repair.

A railroad surmounts summits inaccessible to a canal. It regards not the drought of summer or the ice of winter. By speed it gives value to produce canals cannot transport, and commands the travel against all competition. It almost annihilates time and space.

In Massachusetts we had three canals.—First the Middlesex, which your commissioners came to examine before they begun the Erie. It paid good dividends, but is now worthless, for it has been completely put down by the Lowell railroad built beside it. Second the Blackstone. A railroad will this fall be opened on its banks, and all or

nearly all of the canal will be abandoned.—Third the Hampshire, from New Haven to Northampton. A railroad is now in progress along its tow path. *We have done with canals.*

You ask me the cost of transportation on railroads. It rises and falls with the quantity conveyed. When business rises to 200,000 tons a year, freight can be transported on a line like yours at a cost of six-tenths of a cent per ton a mile, exclusive of loading and unloading. It has been moved for less.—This charge would include the wear and deterioration of cars, and the repairs of the road.

On the Erie canal the average cost, inclusive of interest on boats and horses, but exclusive of canal repairs and attendance which may be offset, is nine-tenths of a cent per ton a mile, or fifty per cent. more. A line like yours, with 200,000 tons could do a most remunerating business at less than two cents per ton to a mile, but with 30,000 tons only must of course charge more to cover charges and interest on capital, say four cents per ton a mile. Two to two and one-half cents per mile pays well for passengers—better than higher charges.

You ask me if you should raise half the capital for your railroad, if you could borrow the residue here. If you move judiciously I think you may. I should begin at Rome and build 47 miles to the lake, as you suggest—thus make the first division productive. I think you could then borrow on 7 per cent. bonds enough to move onward and complete the line; but your lands would not sell until a portion was finished.

The avoidance of the canal toll and the shorter run, if your lake port is accessible, would give you considerable advantage over the Oswego line, perhaps a dollar per ton.

At the outset, it seems to me, you must rely upon yourselves, unless you look east towards Ogdensburg, which will soon be within 15 hours of Boston, with a \$7 fare. You must like Hercules put your own shoulder to the wheel. You must rely upon the country, not the city, like the Fitchburg. You must remember that a railroad, if you build it yourselves, takes no capital from the country, except for the iron, and that contractors take part of their pay in stock.

At some future day, when further advances are made, I may have the pleasure to visit your flourishing town, examine your noble water power, and investigate further the resources of your country, which well deserves a railroad, and which I believe I appreciate right. I may then render you more effectual aid.

Meanwhile I remain yours very sincerely.

HIGH LEVEL BRIDGE.

On Friday, one of the metal arches for this great undertaking was tested at Messrs. Hawks, Crawshaw & Co.'s works, in the presence of Robert Stephenson, Esq., and several other scientific gentlemen. The arch is constructed on the bowstring principle, and is 125 feet span. The ends will rest upon metal plates fixed in the pier, and a small space

will be left for the alternate expansion and contraction of the arch. The arch consists of four ribs, each 3 feet 9 inches broad, of solid metal. The under roadway is suspended from these ribs by means of rods, which pass down the centre of the pillars—the upper part of these pillars serving at the same time as supports for the upper roadway.—There are also 14 transverse, and 8 longitudinal girders, which bind the whole compactly together—the balustrades are in keeping with the rest of the work. The arch was tested by a weight of 500 tons being put upon it, being double the weight to which it can by any possibility be put by the trains, etc., passing over it; and the result gave the most decided satisfaction to all present. With respect to the other works on the river, and the approaches on each side, all is progressing steadily but slowly. The piles for the southernmost river arch are so far completed, that the foundation stone is expected to be laid during the week. The approaches on the south side are rapidly advancing, most of the pillars for the arches are already erected.—Several of the metal pillars which form the direct approach are also reared at the Gateshead side of the river.—*Newcastle Adv.*

CRIMPLE VIADUCT.

This magnificent viaduct, says the Harrogate Herald, will, when completed, form one of the most wonderful of the achievements of science in railway construction in the kingdom. Its massy towering piers are now all reared, and its lofty expansive arches, stretching their wide concavities across deep glen, will shortly be brought to a close. Those of our readers who may be unacquainted with this structure, may feel somewhat interested by a brief description of its situation, and an accurate admeasurement of its gigantic form. Its situation is about a mile to the southeast of Harrogate; it is intended to convey the Harrogate and Church Fenton line of railway across the Crimple valley. The viaduct consists of 31 arches, each of 52 feet span, and the loftiest are 130 feet in height. The piers on which they rest, 32 in number, are about 20 feet each in thickness at the base, and are composed of immense blocks of hard granite. The top of each pier, immediately beneath the springer, is 8 feet, and the quoins 4 feet in thickness. The abutments are thickly flanked, and joined by lofty embankments. The line at the south end is carried through a long deep tunnel: while at the opposite extremity it proceeds along a deep rocky cutting. The whole length of the masonry is about 1856 feet. Between the first and second buttresses at the south end runs the line of the Leeds and Thirsk railway, which is carried along the mountain side a considerable distance, and afterwards thrown across the vale by another viaduct, which, however, appears very diminutive, compared with the one described above. The part of the valley over which the monster viaduct is thrown, is a beautiful and romantic little defile between two high rocky mountains, whose steep and rugged sides are covered with a profusion of heath, brushwood

and other kinds of vegetable life, indigenous to the mountain soil.

Pennsylvania the Pioneer in Internal Improvements.

The Coal and Iron Trade of Pennsylvania in 1847.

We have been favored with a copy of a pamphlet with the above title, from the pen of C. G. Childs, Esq., the able editor of the Philadelphia Commercial List, which we have read with some care and a deep interest. We have never before read a work of 24 pages that contained as much useful information—and there are few men, if any, who have done, in so small space, as much service to the business community, as the author of this unpretending pamphlet.

It not only claims for Philadelphia, and Pennsylvania, the credit of being the pioneer in many important matters, but, what is still better, it shows the claim to be just—especially in relation to the commencement of internal improvements, in the way of turnpike roads, and canals, banks, railroads, iron manufacture, the coal trade, etc., etc., etc.

The best evidence of the high estimation which we place on this production, will be found in the extent of our extracts and quotations from it—by permission, however, it being a copy right work. It should be read by every business man in the community.

The writer says of the "Coal Trade:"

The State of Pennsylvania has claims which seem to be imperfectly understood by her sisters of the Union. The reason probably is, that those claims have failed of being properly asserted. In the history of valuable discoveries and of pioneer operations in the great works which are to give character and wealth to our nation, Pennsylvania, and the city of Philadelphia in particular, is entitled to no secondary place. While all due honor is cheerfully accorded to the city of Boston, for the liberality and successful enterprise of her citizens, justice to Philadelphia demands that there should be, in the comparison, a more distinct remembrance of what she has done, than appears generally to prevail.

The great fact that in all works of internal improvement, Pennsylvania has been the pioneer, is one which eminently deserves the consideration of the country. If a wider range of details were taken, it would be interesting to dwell on such facts as these, viz: that the quadrant was here invented by Godfrey—that here Franklin taught men how to control the lightnings of heaven—that on the Delaware, at Philadelphia, John Fitch first proved the power of his rude steamboat, and that it was Fulton, a native of Pennsylvania, who immortalized his name, by maturing that wonderful invention—that the first locomotive was set in motion, near the corner of Ninth and Market streets, by its inventor, Oliver Evans, who, with the foresight so often noticed as a characteristic of great discoverers, declared, that the time would come, when one would "breakfast in New York, dine at Philadelphia, and sup at Baltimore."

Here, in 1752, was opened the Pennsylvania hospital, the first public hospital in the United States. The first bank in this country, the bank of North America, was established here in 1790, with Robert Morris at its head: and the first insurance office, under the title of "The Philadelphia Contribution-

ship for insuring houses from loss by fire," had already been established here in 1752. Here, in 1793, was organized the first Sabbath school in the country, by the efforts of Bishop White, Thomas P. Cope, and a few other prominent citizens—an honor now appreciated throughout the Union. The first institution for the blind was that established in this city. The first medical college was opened here. The Academy of Fine Arts, instituted in 1806, was the first of the kind in this country. Philadelphia first showed what might be done in supplying cities with water, by her astonishing Fairmount Water Works. In her Eastern Penitentiary she furnished a model for institutions of that class which has been extensively approved and imitated, both in this country and in Europe. Here too before the revolution, the great discovery which has given us the magnetic telegraph, led Franklin to give signals by electricity across the Schuylkill.

In such a review, it might be added that the merchants of Philadelphia had the patriotism, and the liberality, to build a frigate, (the Philadelphia) and present it to the United States government, the only instance of the kind on record; and the State of Pennsylvania erected a house in Philadelphia, and offered it as a present to Washington. Here also, a stand was taken against the exactions of Great Britain, in advance of Boston herself. The first opposition to the landing of tea was made at a public meeting held in Philadelphia, December, 1773, some weeks before the celebrated tea party executed its work at Boston.

Last, though not least, should be mentioned the fact known throughout the civilized world, that from Philadelphia came forth the DECLARATION OF INDEPENDENCE.

But the part which Pennsylvania has taken in the great works of internal improvement, evidently needs to be better understood. A thorough investigation of this subject would cause surprise in many quarters, and place the character of our city and commonwealth in a most honorable position.

It is to be remembered that the surface of this State presents an obstacle to internal improvements, greater than is found in any other. Vast ranges of mountains are to be scaled, because there are no gorges through which roads can pass. Rapid and turbulent streams, which are frequently swollen by the rains and snows of the mountains, often carry destruction in their course. Yet the mountains have been scaled by our turnpike roads and substantial and costly bridges have been thrown over the thousand streams. In the extent and cost of her turnpikes, Pennsylvania has long been in advance of all her sister States. The turnpike from Philadelphia to Lancaster, was the first undertaken in the Union, and was completed in 1794, at a cost of \$465,000. Subsequently, the whole surface of the State was traversed by these roads. But the day of turnpikes has passed away, and the famous Conestoga wagons, with their noble six horse teams, whose bells sounded along the mountain defiles, and warned the traveller of their approach, are to be reckoned

among the wonders of Pennsylvania, as it was. From 1791 to 1830, there were expended, in making turnpike roads, in this State, upwards of \$8,500,000, in addition to the sum expended by counties.

The bridges of this State have been accounted one of its remarkable features. The Schuylkill "Permanent bridge," erected in 1798, at an expense of \$300,000, was the first great work of the kind attempted in this country. The first Fairmount bridge, with its span of 358½ feet, outrivalling the famous bridge of Shaffhausen, and the wire bridge erected in 1817 at the Falls of the Schuylkill, which served to suggest the idea to European builders, were an honor to Philadelphia. The bridges in the interior, by their number, and their substantial and even bold character, have done honor to the State.

For the introduction of canals, as well as turnpikes, to the public attention, the country is indebted to Pennsylvania. Even William Penn seems to have meditated on the project of connecting the Susquehanna with the Schuylkill; and in 1762, David Rittenhouse and Dr. William Smith surveyed a canal route for the purpose. At that early day, these gentlemen had in view the connecting of the lakes and the Ohio river with the Delaware, by a route of nearly 600 miles! The survey, under the authority of the legislature of Pennsylvania, was accomplished in 1769. In 1791, a company was incorporated for connecting the Susquehanna and Schuylkill, and in 1792, another was incorporated for connecting the Schuylkill with the Delaware by the way of Norristown. At the head of the latter was Robert Morris, the celebrated financier. These two companies undertook the work, and proceeded with it, when, after having expended \$440,000, they were embarrassed, and suspended operations, a number of the leading individuals having become bankrupt in this herculean effort. These beginnings, however, resulted at length in the completion of the Union canal. The first tunnels excavated in the Union, were in Pennsylvania. The first survey for the Chesapeake and Delaware canal was made in 1768, by order of the American Philosophical Society; and as early as 1804, \$100,000 were expended in the execution of the work.

When the period of railroads arrived, Pennsylvania was again the pioneer. The railroad at Mauch Chunk, constructed with Philadelphia capital, was the first in the Union; or, at least, was anticipated only by a short tram road at Quincy, Mass. From that period to the present, Philadelphia has been second to no city in the Union, in expenditures for constructing these wonderful annihilators of time and space.

The Coal Trade of Pennsylvania is attracting, more and more, the attention of the country. No thinking person can contemplate its progress without being deeply impressed with the importance to our Union, of the State in which such vast resources of fuel are found. Were Pennsylvania annihilated, with all her mountains of coal and iron, how melancholy would be the condition of her surviving con-

federates, in regard to these two grand requisites of civilized life.

If the importance of the coal trade is inconceivably great, its progress has been astonishing. Anthracite coal was first used as fuel (on tide water) in 1820, and the total supply then sent to market was 365 tons!—a quantity smaller than that now annually consumed by hundreds of single establishments. We now find a single iron manufacturing company in our State consuming 60,000 tons of anthracite, and 100,000 bushels of bituminous coals annually.

From being regarded a doubtful article of combustion at all, anthracite coal has come to be largely used for domestic purposes, for the production of steam in manufacturing establishments, for propelling steamboats and railroad locomotives, and more recently for the manufacture of iron, for which purpose it is employed on an immense scale. In 1840, there were no anthracite furnaces in full and successful operation. There are now 40 furnaces in blast, many of them of the largest class. Within the last three years 18 rolling mills have been erected, which consume hundreds of thousands of tons of coal annually. This branch of business, so important too in a nation view, is destined to increase rapidly, as the demand for railroad iron increases in almost every section of our country. It is only by collecting details and uniting them, that the extent and importance of the coal trade is made apparent. It has already more than trebled the coasting trade of Philadelphia, and pays, annually, a freight on the shipments coastwise from this port, of more than a million of dollars. If this trade is of such importance in this period of its infancy, what will it be in its full growth?

About the year 1837, a report was made to the government by MAJOR BACHE, of the Topographical Engineers, on the subject of an artificial harbor or breakwater, at Cape May, in which he states that the *insurable interest created by the coal trade passing around Cape May alone, already amounts to more than twenty-two millions of dollars per annum*, estimating merely the vessels in ballast coming after it, and the value of the vessel and cargo carrying it to the various ports at which it is wanted. Many of these vessels bring us supplies from the ports they come from, at merely a nominal freight, instead of ballast, plaster, fish, lumber, salt, and other articles required for consumption in the interior, which add materially to the resources of the canals and railroads.

In England, coal appears to have been first used as fuel, about the close of the 12th century. In 1339, Henry III. granted a charter to the burgesses, of Newcastle, to dig for coal; which is the first legal mention of the article on record. As early as 1140, we find among the Leges Burgorum, an enactment giving special privileges to the inbringers of fuel, which is described as being "wood, turves and peats." The English coal trade, which now amounts to forty millions of tons annually, may indicate to us something of what we have reason to predict in our future career.

Perhaps few persons have distinctly considered the aggregate expenditure in the improvements designed to facilitate the transportation of coal from our vast coal fields.—Let us look at some definite statistical account of these operations.

NAMES AND COST OF THE CANALS AND RAILROADS LEADING TO THE COAL MINES.

LEHIGH COAL REGION.

	Canals length.	Railroads length.	Cost.
The Lehigh Navigation—Extends from Easton to White Haven, 71 miles, and thence to Stoddardsville, 16 miles—there is an improved navigation.....	87		\$4,555,000
Whitehaven and Wilkesbarre railroad—From Whitehaven to Wilkesbarre with three inclined planes and one tunnel.....	20		1,350,000
Mauch Chunk railroad—From Summit & Room Run mines to Mauch Chunk and back tracks.....	36		600,000
Beaver Meadow Road—From the Beaver Meadows to the landing on the Lehigh canal.....	26		360,000
Hazleton Railroad—To Lehigh canal.....	10		150,000
Buck Mountain Railroad—To Lehigh canal.....	4		40,000
Summit Railroad.....	2		20,000
Total Lehigh Improvements.....	87	98	7,945,000

SCHUYLKILL REGION.

The Schuylkill Navigation—Commences at Philadelphia, and terminates at Port Carbon, [including cost for enlarging to this time.....]	108		\$5,675,000
The Reading Road—Extends from Richmond to Mt. Carbon, with a branch from the Falls of Schuylkill to the Columbia railroad at Peters Island, including cost of locomotives, cars, etc.....	93		11,000,000
Little Schuylkill Railroad—Between Port Clinton and Tamaqua, cost \$950,000, and new rails now laying, \$230,000.....	20		500,000
Mine Hill and Schuylkill Haven Railroad—Cost \$430,000—new rails, and 7½ miles extension to Swatara, \$120,000.....	25		550,000
Danville and Pottersville Railroad—Unfinished, and only part in use.....	29½		680,000
Mount Carbon Railroad.....	7		155,000
Mount Carbon and Port Carbon Railroad.....	2½		190,000
Schuylkill Valley Railroad.....	14		300,000
Mill Creek Railroad.....	6		120,000
Railroads constructed by individuals, aggregate.....	70		180,000
Railroads under ground in the mines.....	60		75,000
Total Schuylkill.....	108	357	19,365,000

OTHER PLACES.

Lykens Valley Railroad—To Susquehanna canal.....	16		290,000
Wisconsin Canal—To Millersburg on Susquehanna.....	12		70,000
Swatara Railroad—To Union Canal.....	4		20,000
Lorberry Railroad.....	4		20,000
Total other places.....	19	24	310,000

RECAPITULATION.

Lehigh Improvements.....	87	98	7,045,000
Schuylkill.....	108	357	19,365,000
Other places.....	19	24	310,000
Total.....	207	449	26,720,000

To these must be added the Delaware and Hudson canal, 106 miles long, and railroad 24 miles, cost..... \$3,350,000
 Morris canal, 102 miles long, constructed to carry coal to New York, cost..... 4,000,000
 Total as above..... 26,720,000

Grand total..... \$34,970,000
 Total length of canals, 417 miles.
 Total railroads..... 473 miles.

The coal trade gives employment to a very great number of persons. Indeed, nearly all the cost of the article is the result of labor. In its locality it is worth only from 25 to 50 cents per ton; averaging 35 cents per ton.—But in all the operations connected with mining and transportation, a vast amount of labor is employed. We must take into account not only the miners, and the boatmen and brakemen on the canals and railroads, and the hands on board the transporting vessels, and the carmen at the places of delivery, but also the thousands employed at some time, in making the necessary railroads and canals, the locomotives and stationary engines, the boats, etc., etc.

The sums thus invested in providing avenues for the coal trade may be computed;—but the enhanced value of lands, and the property which appears in smiling villages where once roamed the panther and the bear, baffle all our attempts at calculation.

These exhibitions of the extent of the coal trade, and its importance to the Union, lead us to ask whether this interest has not a very strong claim upon the government for protection and encouragement. If not, how could such a claim be conceived of as possible?—What operations can be more intimately connected with the prime elements of national growth and power? What political wisdom can discern the propriety of withholding the protecting power of the government here, unless it be that which denies, altogether, the justice and policy of any restrictions on the disheartened competition of other nations, which is fitted to keep back our own enterprise for centuries?

The proximity of the Nova Scotia mines to the New England States—the immense capital of the British Mining Association—the present holders of the original grant to the Duke of York and the facilities they possess for bringing their coal into this country, to the destruction of our own industry, seem to require some legislative enactment in behalf of this important trade.

IMPORTS OF FOREIGN COAL.

The following table shows the imports of foreign coal into the United States, from 1820 to 1846, inclusive:

1820.....	22,122	1834.....	71,626
1821.....	34,523	1835.....	49,969
1822.....	30,433	1836.....	108,432
1823.....	7,228	1837.....	153,450
1824.....	35,645	1838.....	129,083
1825.....	35,665	1839.....	181,551
1826.....	40,257	1840.....	162,867
1827.....	32,302	1841.....	155,394
1828.....	45,393	1842.....	141,526
1829.....	58,136	1843.....	41,163
1830.....	36,509	1844.....	87,073
1831.....	72,978	1845.....	85,771
1832.....	92,432	1846.....	156,853

As early as July, 1789, and soon after the

adoption of the federal constitution, a law was passed laying a duty of two cents per bushel on imported coal. (See pub. doc. page 72.) August 10th, 1790, the duty was increased three cents per bushel. Again on the 2d of May, 1792, the duty was increased to 4½, and on the 7th of June, 1794, to 5 cents per bushel. This duty was continued under all the party changes, until April 27th, 1816, when the duty was changed to 5 cents per heaped bushel. In 1824, May 26th, after our coal had begun to be used, the duty on imported coal was increased to 6 cents per bushel, or \$1 50 per ton. Gen. Jackson, then a member of congress, voting in favor of this duty. In 1842, the duty on imported coal was raised to \$1 75 per ton; but even with this check to its importation, some supplies were brought in, as will be seen by a subsequent statement taken from official documents. By the present tariff, the duty is only about 45 cents per ton on board, and may be reduced to 35 cents.

It thus appears that Washington, Madison, Monroe, Adams and Jackson gave their high sanction to the protection of the coal interest—an interest of the importance of which even those far reaching minds must have formed a very inadequate idea. Of the use of coal in the production of steam, it is not easy to say what suppositions and expectations it would be safe to pronounce extravagant. In an address lately delivered, Mr. Pierpont indulged in the following illustration:

"It required twenty thousand men twenty years to build one of the pyramids of Egypt. The same number of men might, by the aid of steam, accomplish as much work now in twenty-four hours. Cylindrical boilers are the seven league boots of the country."

In reference to the use of coal in the manufacture and working of iron, it is pertinent to quote the remarkable language of Mr. Lock, in his Essay on the Understanding, where he says—"Were the use of iron lost among us, we should, in a few ages, be unavoidably reduced to the wants and ignorance of the ancient savage Americans." And, whether we can fully subscribe to this sentiment or not, we cannot object to the beautiful declaration of the same philosopher, that he who first made use of iron, "may be truly styled the father of arts and the author of plenty."

Our large table shows the comparative quantity of anthracite coal sent to market from the different coal regions in Pennsylvania, from the commencement of the trade in 1820, to the close of the past year. Nearly all the above returns are official, being obtained by us from the different regions. It will be seen they vary in several cases from the reports of the Miners' Journal, the only paper beside our own that has pretended to keep up original yearly statements of this important trade.

Anthracite coal was first used as fuel (on tide water,) in this country in 1820, when the total supply sent to market was only 365 tons. If we divide the 27 years that have elapsed since coal was first used, into three

periods of nine years each, it will be seen that the total supply from all the mines in the first period, ending with the close of 1828, was 239,845 tons.

Second period ending 1837, 3,829,829 "

Third period ending 1846, 11,549,061 "

Showing the annual average receipts for the first nine years to have been 26,648 tons.

Second period, 454,534 "

Third period, 1,283,229 "

From which it appears that the quantity consumed during the last nine years was nearly three times as large as during the preceding eighteen years.

To be continued.

PROGRESS OF THE RAILWAY SYSTEM IN ENGLAND.

Herapath, in his Journal of 17th July, says that "Our last paper (p. 777) will have announced to parties interested in railways, that up to yesterday week, July 9th, 136 railway bills received the royal assent, authorizing the construction of 1,141 miles of railway, and requiring a capital, including iron, of about £28,000,000.

But there were presented in this session of parliament 320 bills; and, up to yesterday week, only about 60 of them have been withdrawn or otherwise thrown out; leaving 260. Consequently, deducting from these 260 the 136 which have already received the royal assent, and we have 124 bills still before parliament, many of which are in an advanced stage towards completion. It is probable that the majority of the 124 will be passed. It all, or nearly all, be passed, we shall then have another batch brought into existence about equal to the lot which have just been fully sanctioned—say about £24,000,000 more, making (with the £28,000,000) the sum of £50,000,000 for railways passed in this session.

If we take the cost of the railways established prior to 1844, as £80,000,000, we shall not be wide of the mark. Then, in the session of 1844, there were sanctioned railways to the extent of—(in all cases including loans as part of capital)—£16,000,000. In 1845, as much as £58,000,000 worth were passed. In last session, 1846, there were about £120,000,000 sanctioned. Adding to these totals, £28,000,000 for the lines just sanctioned, and we find the total capital for railways made, being made, and authorized to be made, amounts to £300,000,000. To this we might also add the £24,000,000, which we expect will be further sanctioned before the close of the present session, making £320,000,000. But we have certainly, within a fraction, £300,000,000, as the capital of the old and authorized new lines.

Of this £300,000,000, by far the major part has to be called up for the construction of the new lines. Only £80,000,000 of it are for old lines. Say that £30,000,000 have already been paid on calls, on account of the new lines. There will, therefore, be £110,000,000 to be taken from £300,000,000, leaving £190,000,000 yet to be subscribed for the new lines. If there should be £24,000,000 more sanctioned in this session, there will be £240,000,000 to be paid up by the public. Per-

haps we may set down in round numbers—not by any means being desirous to exaggerate—£200,000,000, as the amount of future calls.

This result is certainly serious, and demands the deepest attention of all engaged, or interested in railways. With good management, the enormity of such a liability might be rendered indestructive; prudence might even turn it to good account. But if directors go recklessly to work, we cannot answer for the consequences.

If shareholders subscribe £50,000,000 a year in calls, there must be four years consumed in constantly paying up, at this rate, before they (the shareholders or the public) will be released from their liabilities. But it is to be hoped that such arrangements will be made, principally by the present abandonment of a host of almost useless branches, which some of the railway companies have, in their wisdom, armed themselves with power to make, that the payment of the two hundred millions will be spread over a period of more than four years, and thus reduce the subscription in calls to something less than fifty millions a year, or about a million a week.

The sample of management, however, which we now have before us in the table of calls, compiled for us by our correspondent, 'Frank Marvel,' is not at all encouraging. 'Frank Marvel' shows that the amount of calls for this month (July) is £5,227,725;—or more than a million and a quarter per week.!!!*

We may observe, passingly, that the table which our correspondent furnishes is as accurate as great labor and unusual means for obtaining such information can make it; and if there is any error, it is that of omission—the real amount must be larger, not less than £5,227,725.

We have no wish to frighten or alarm shareholders, but we really think the above facts demand that they should pay a little more attention to their affairs than it is the fashion to do.

The proverb is, 'It seldom rains but it pours.' Unfortunately at this moment France is in want of a loan of £12,000,000.

By far the larger portion of the £200,000,000 is for branch lines, projected by the established companies. Most of them, we will be bound to say, are next to useless, and will only tend to dilute the profits of companies which are now paying good dividends.—Shareholders have it, therefore, in their own hands, to prevent the enormous expenditure for such lines. They can come to resolutions requiring their directors to suspend the construction of them, by which they will not only save themselves from the ruinous engagements of having to pay calls for years to come at the rate of more than a million a week, but will prevent the threatened reduction of their present dividends.

We have long urged upon railway direc-

* Since writing the above, 'Frank Marvel' has sent us some corrections or additions to the table of calls, rendering the amount for this month £5,332,725.

tors and shareholders the folly of that wholesale creation of branches and amalgamation, and leases which bid fair to reduce dividends to little, and something beautifully less. Our warning voice has been disregarded. A spirit but little better than madness has been abroad. Line after line has been created—branch after branch has been projected, and boards, instead of being checked, have had all their propositions received with clapping of hands and shuffling of feet, as if they were conferring some everlasting good, instead of tagging to the concerns schemes which must inevitably reduce their value and their dividends. It is now reported that one of our great lines will drop its dividend a half per cent, for the half year at the next meeting. Unless the pruning knife be vigorously applied to the superfluous branches, we shall not at all be surprised to see some of our 10 per cent. lines gradually drop to five and others to less. Shareholders run away with the notion that they can have the premiums and dividends too. They cannot or will not understand, that every addition paying less than 10 per cent, or less than the parent line, must necessarily reduce their annual income. No, a line paying 10 per cent., they imagine will, by a sort of magic, make everything added to it pay the same dividend, and, therefore, will not reduce the dividend of the old line. A very few years, we expect, will teach them better, and open their eyes to the improvidence they have committed in their unrestrained creation of capital.

Many of the branches and extensions, we admit, are not of the several companies seeking, but are forced upon them by circumstances. A restless neighbor thrusts out a branch into their dominions, and to save themselves, they are obliged to project another, or perhaps two, without any regard to cost or returns. As, however, it will not do to tell the shareholders this, the projectors of these branches so contrive to mystify the case with figures and assurance, as to make the barren projects appear to be excellent acquisitions. A high premium, or one proportional to that of the parent company is asked and obtained for the new shares, and the fortunate sellers go their way rejoicing, not dreaming that the very premium, if not more, which they have pocketed for the branch, must, ere long, be taken out of the share price of the old line.

In the majority of cases, however, these branches are not even forced upon the companies by external circumstances, but are the creations of the engineers or solicitors of the companies, or perhaps of both together, or are the creations of a designing, unscrupulous man of influence in the company, who has some interest to serve. Cases have not been wanting where land or an estate has been bought first, and a branch or an extension projected afterwards. There was one instance in which land of the value of £300 was charged to the company by one of the directors, and paid for at £30,000. Not is this a solitary instance; others equally as flagrant can be adduced; but we hope and believe they are not very common occurrences. Branches, though not unfrequently the crea-

tures of boards, are more generally the offspring of cupidity in certain officials. But come from whatever source they may, the shareholder will do well to have none, or as few as possible of them made. The large amount of capital to be called up, for really necessary schemes, will be sufficient to tighten, if not cripple, the money market, and consequently to depreciate very materially the price of railway stock, without the burden of unprofitable and useless branches. But the new creations in the present year, consist almost entirely of branches and needless extensions. Shareholders, therefore, should insist on their postponement. If they do not, they must expect, ere another year pass over their head, to see their most valuable property reduced some 50 per cent.

We give these remarks entire, as they reprove, with great freedom, the present doubtful policy—in the estimation of many—of numerous branches to the principal main lines of railroad in England. We like the freedom with which the editor of this Journal often comments upon the policy of some of the companies.

CRAMPTON'S LOCOMOTIVES.

The London Morning Herald of July 22d says that "the 8-foot driving wheel engine, (Crampton's) on the working of which great expectations were formed by the narrow gauge party, and the details of a very good performance of which we gave a short time since, has been singularly unfortunate upon the London and North Western line. Although admirably balanced upon her wheels, and of excellent workmanship, hot axles have been a common occurrence with this engine. She got her buffer beam broken, and her axle boxes injured, by most culpable negligence on the part of a driver of a pilot engine.—She was sent with instructions, for slight repairs, into the shed, where she remained much too long a period, considering the important influence her working was likely to have on the question of the gauges. Again, if we are not mistaken, we have ourselves seen several different men driving and stoking the engine in the few trips that she has taken. This change of men is certainly most injudicious with a locomotive having a fire box of a novel construction, and difficult to feed.—Practical people know that the best mode of firing and working such an engine is not to be ascertained either the first or second trip. The engine took a couple of trips yesterday, on the London and North Western line, with ordinary trains, prior to her being taken into the shed to be thoroughly inspected. We rode down the line with her, and, although we think her fire box defective, an evil which can be remedied, we are confirmed in the soundness of the favorable opinion we formerly expressed of her. The fire box when well fed does not afford her all the steam necessary for high velocities with heavy loads. It was pointed out at the time that the remedy was to be found in excellent bearings;—and we learn that in the new engines of this class that have been ordered by various companies, the patentee is adding three feet to the present 14 feet bearings. This addition will enable him to make his fire box of the old

shape. Any stoker will then be able to feed it, and we have no doubt that Mr. Crampton will, with such an alteration, be able to show a very important improvement in the speed and power of narrow gauge passenger engines.

ELECTRICITY AS APPLIED TO THE SMELTING OF ORES.

We are given to understand, upon undoubted authority, that arrangements have been entered into for the purpose of fully testing the process lately patented by Mr. A. Wall, for refining and smelting ores by electricity, and that Dartmoor is to be the scene of operations—the Dartmoor Consols Mining Company having, for a limited period, placed the smelting house, situate on their mine, at the disposal of the patentee. We have already made mention of this highly important discovery in a former number, and we congratulate the mining interest on the principle being so near development; and should the result of the experiment be favorable, which we predict it will be, there can be no doubt it will give an impetus to the trade, and a new era will be arrived at in the art of smelting.

We understand the experiments hitherto made, have been on the harder metals—such as iron and steel—and which have been highly satisfactory. The object of the present experiments at Dartmoor is, to prove the great superiority of the electric process on the more ductile metals—such as tin, copper, lead, etc. We cannot, therefore, speak too highly of the liberality of the directors of the Dartmoor Consols Mine, in thus enabling the patentee to show the results in the very heart of the mining district, where these metals are chiefly produced, and which, we understand, he confidently anticipates will be yet more favorable than on the harder metals. Hitherto smelting the ores, raised in the two counties of Devon and Cornwall, has been a trade of itself—the ores being sold at or near the mine and taken to Wales to be smelted; and this business being in the hands of a few very rich individuals, there is not that fair competition that there should be in a trade of such vast magnitude.

To obviate this great evil, which weighs heavily upon those who have a vested interest in mines, as well as on the miner who extracts the ore, has been the anxious desire of many patriotic individuals; but the monopoly has taken too deep a root to be easily removed, and, we lament to say, it still exists in full vigor. By the new process, smelting will be carried on at a much less cost; and we confidently anticipate that furnaces will be erected in localities where the ores are produced, and smelted on the spot, instead of being conveyed at a considerable charge for carriage, freight, etc., as now practised—thus enabling the industrious miner, and the capitalists who invest in mines, to divide a handsome profit, which is now swallowed up by the monopolist; and many mines that are worked at a loss, will return dividends to the shareholders. We hear that a large offer has been made to the patentee by a private capitalist, for the exclusive right of using his patent in the two counties of Devon and Corn-

wall; but he rejected the offer, preferring to allow those locally interested to share the benefits to be derived from his discoveries.—*London Mining Journal.*

BARON VON RATHEN'S COMPRESSED AIR LOCOMOTIVE.

In our Journal of the 12th June, we made mention of some experiments which we had the pleasure of witnessing at the College for Civil Engineers, at Putney; which had for their object to test the practicability of Baron Von Rathen's new plan (patented, but still unspecified) of working locomotives by compressed air. We stated that we had seen on that occasion air compressed to upwards of 850 pounds per square inch, and this enormous power was set free again with the greatest facility for locomotive purposes—that is to say, not all applied at once, but "set free" or let off, as wanted, in quantities proportionate to the work performed. We noticed, further, that there was a common road locomotive in the course of building at the work shops of the college, which was intended to be worked on this plan. Since then some additional experiments have been exhibited by Baron Von Rathen; for the following particulars of which we are indebted to an eye witness:

On the 8th inst., the compressed air reservoir was again charged to upwards of 800 pounds per square inch, in the presence of a number of gentlemen, who have associated to make trial of Baron Von Rathen's system; and if that trial prove successful, of which there now seems every probability, to promote its general adoption, both on railways and common roads; and, in order to show the perfect control under which this prodigious force is kept, and the ease with which it may be applied, in more or less abundance, the air was allowed to escape from the reservoir, at intervals, regulated solely by the pleasure of the persons superintending the experiment. The noise made by these successive escapes of air, was like that of a battery of cannon. Another point which remained to be practically demonstrated, was the length of time which the reservoir was capable of retaining a body of air under so high a state of compression; and in that respect also the result was in the highest degree satisfactory. Four days after the experiment just described the reservoir was again tried in the presence of the Duke of Buccleugh, the enlightened and public spirited patron of the college, and several other noblemen and gentlemen—being still in the same state in which it was left on the 8th inst., and reduced only in its original force by the amount of air discharged from it on that occasion. The working power of the apparatus was now found to be for all practical purposes, in as high a state of perfection as ever—the air issuing with apparently undiminished elasticity from its state of confinement, and with a noise that could only be likened, as before, to that of heavy artillery. Of no other motive power yet invented, can it be said that it is capable, like this, of being stored up in any quantity, not only till the occasion arrives for its use, but in a state always fit for instant use; stored up, moreover, in vessels which may be either

stationary, or carried about from place to place. Of no other known power either can it be said with so much truth, that it is unlimited in its source, and free from everything like nuisance in its application.—*Mech. Magazine.*

From the London Mining Journal.

THE AMERICAN STEAMER "WASHINGTON."

Kymer and Leighton's Fire Bars.

SIR: I have just read in the Mining Journal of 17th July, a short account of the return of the American steam ship Washington to Southampton, after destroying two sets of fire bars, which you state "a committee of the passengers attributed to the bad quality of the coals—a species of anthracite much resembling the American." I beg to make a short comment upon this. The destruction of the grate bars was owing to the superior quality and strength of Welsh anthracite coal over the American; the latter contains a very large proportion of ash, or earthy matter, which protects the grate bars from the joint action of carbon and the blast. There is but one vein, or seam, of anthracite in Wales which can be used with a blast and common grate bars; this contains about 20 per cent. of ash—that is, earthy impurity. The generality of Welsh anthracite will not average more than four per cent. I enclose you a circular, consisting, for the most part, of extracts from your valuable Journal, in which you will find the analysis of some coal containing only 1.18 of impurity in 100 parts. With such coal as this, I have run a set of bars together in less than two hours; this was owing to the strength of the fuel, not to any inferiority in quality. In order that such fuel as this might be applied to steam navigation, by the use of a fan blast, I contrived a grate having a trough of water under each fire bar. As I have so repeatedly brought this matter before your readers, I refrain from further comment, than merely to state my decided opinion with respect to the Washington steamer. I know nothing of her qualities as a sea boat, but, *ceteris paribus*, referring merely to the generation of steam. Had the Washington gone to sea, fitted with Kymer and Leighton's grate, using the Garnat pig vein coal (some of which I believe was shipped at Llanelli for her use) and an ample blast, no steamer on the ocean would have kept up with her. Although wearied out, and disgusted by the neglect and apathy with which the anthracite coal owners have always treated this plan, I cannot resist the impulse of placing the merits of the case in a true light.

T. H. LEIGHTON.

Llandebie, near Llandilo, July 18.

From the London Mining Journal.

IMPROVEMENT IN SIGNALS FOR RAILWAYS.

SIR: Shortly after the very serious accident at Wolverton, on the London and North Western railway, my attention was directed to the principle of signaling generally adopted on railways—the use of different colored flags by day, and different colored lights or lamps by night. This principle, so far as I know, has in general wrought well, and might for some time at least have retain-

ed the confidence of railway proprietors and the public, but for the Wolverton accident, which, in my opinion, may be traced to this very objectionable mode of signaling. It is a well known fact, that many individuals have not the power of distinguishing colors at all; and that, where this defect of vision does not exist, any sudden transition of the eye from one color to another, occasions confusion and indistinctness in determining the color presented to the eye. If these statements are correct, then I think that the confusion and consequent fatal blunder of Fossey are easily accounted for; or should the memory fail for an instant in its power of associating a certain colored light with a particular train, there is nothing tangible left to resort to for its correction. The approaching train leaving but little time for reflection, necessitates a movement of some kind on the part of the watchman, which movement has too often been of a wrong kind, although not always attended with such serious results as the case referred to. What I would suggest is, that each lamp used as a signal, should take the form of a letter, which letter should be significant of the character of the train to which it is attached—for instance, a lamp in the form of a P should be placed on a passenger train, and one of the form of an L for a luggage train, and so on in respect to the other descriptions of trains. The same principle I recommend to be adopted for the signal lights at the different stations. It would then be immaterial what color of light is used, as the recognition of a letter, either on the train, or on the signal posts of the stations would determine the movements of the different parties immediately concerned in the management of the trains. This principle, if adopted, would at once relieve the minds of all connected with the movements of the trains from all embarrassment, arising from defective memory, or disordered vision, as the appearance of a letter, the initial of the thing signified, would be at once tangible to the most obtuse understanding, and give scope for a greater variety of signals than the present system can admit of.

ROBERT BOWMAN.

Co. James' Square, Wolverhampton.

July 26, 1847.

Fall of Another Bridge.—On the evening of Thursday last, the bridge in the course of erection over the Tweed at Ashysteel, fell with a tremendous crash into the water. The ruins of it now lie like a vast dam across the Tweed, with only a narrow outlet in the middle, through which the water passes. The whole wooden framework supporting the arch was literally smashed to pieces. No individual saw the bridge fall, the workmen having all left a short time before. Mr. J. Smith, one of the architects, had just examined it, and seen nothing wrong. The cause of the accident is not properly ascertained.—The arch, which was 135 feet span, and constructed entirely of whinstone, was a double one; both arches were finished, and they were putting on the balancing. Some attributed the accident to the haunches or outer ends being overloaded, but this is mere con-

jecture. We understand Messrs Smith have commenced active operations to have it rebuilt this season on the same gigantic scale as at first.—*Border Watch.*

A Modern Miracle.—A rope, nearly three miles long, now lies on the verge of the borough of Gateshead, which was the other day a stone in the bowels of the earth. Smelted, the stone yielded iron. The iron was converted into wire. The wire was brought to the wire rope manufactory of R. S. Newall & Co., at the Teams near Gateshead, and there twisted into a line 4660 yards long. It is, we believe the stoutest rope of the kind that was ever made. It weighs 20 tons 5 cwt., and will cost the purchasers upwards of £1,134. It is intended for the incline on the Edinburgh and Glasgow railway, near the latter city. A rope of hemp, of equal strength, would weigh 32½ tons, and cost about £300 more. It would also entail greater expense while in operation, (owing to its greater weight) and sooner wear out.—*Gateshead Observer.*

TWO CONTRACTORS.—KENNEBEC AND PORTLAND RAILROAD. Proposals will be received at this office, and at the office of the Resident Engineer, in Gardiner, until the 21st of August, for the Grading and Masonry of 21 miles of this road, extending from Bowdoinham to Augusta.

The line of road and the place and profiles will be ready for examination on the 12th of August, after which time any information in relation to the work can be had at the engineer's office in Brunswick and Gardiner, or of the resident engineer on the line of the road.

Persons unknown to the officers of the company, must accompany their bids with satisfactory evidence of their ability to complete the work.

The remainder of the line from North Yarmouth to the depot of the Portland, Saco and Portsmouth Railroad in Portland, 15 miles, will be ready for contract on the 18th of September, of which due notice will be given. GEORGE S. GREENE,

Engineer K. & P. R. R.

ENGINEER'S OFFICE, K. & P. R. R.

Brunswick, July, 12, 1847.

2133

NOTICE TO CONTRACTORS.—GREAT WESTERN RAILWAY, CANADA WEST. Sealed proposals will be received until the 1st day of next October, at the Office of the Great Western Railway Company, for the Grading and Masonry of the Western Division, extending from London to Windsor, a distance of one hundred and ten miles; also for the branch to Port Sarnia, forty-five miles in length.

Plans and Specifications of the work can be examined at the Engineers' Office, in Hamilton and London, on and after the 15th of September.

C. B. STUART, Engineer.

Hamilton, July 30, 1847.

2132

LOCOMOTIVE AND CAR AXLES.

The Subscribers are now prepared to receive orders for the well known and approved *Reading Locomotive and Car Axles*—drawn to any required pattern from *Bloom Iron* only. Address

SAM'L KIMBER & CO.,

Willow Street Wharf,

4th Philadelphia, Pa.

THE SUBSCRIBER IS PREPARED TO execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, &c., &c.

PETER COOPER 17 Burling Slip.

1y10 New York.

BACK VOLUMES OF THE RAILROAD JOURNAL for sale at the office, No. 105 Chestnut street.

DAY, CROSKY & ROSS,
COMMISSION MERCHANTS,
57 THREADNEEDLE STREET, LONDON.
13 ORCHARD PLACE, SOUTHAMPTON.
SHIPPING & COMMISSION AGENTS

FOR
PASSENGERS, SPECIE, GOODS, PARCELS, etc.
To all parts of the United States, North and South America, West Indies, India, [overland or otherwise,] Constantinople, Egypt, the Mediterranean, the Peninsula, and all parts of France—via Havre.

Agents at Cowes for the Ocean Steam Navigation of New York.

Persons wishing to transact business with Messrs. D. C. & R., will please apply to the subscriber, who will make cash advances on consignments to their address.

July 31—3m

ROBERT GRACIE.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 1 in calibre and 8 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T. L., and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

LAP-WELDED WROUGHT IRON TUBES
for Tubular Boilers, from 14 to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,

12 Platt street, New York.

JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

SPRING STEEL FOR LOCOMOTIVES,
Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 14 to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, Agent,
Albany Iron and Nail Works,

A. & G. RALSTON & CO., NO. 4
South Front St., Philadelphia, Pa.

Have now on hand, for sale, Railroad Iron, viz: 180 tons 24 x 1 inch Flat Punched Rails, 30 ft. long. 25 " 24 x 1 " Flange Iron Rails.

75 " 1 x 1 " Flat Punched Bars for Drafts in Mines. A full assortment of Railroad Spikes, Boat and Ship Spikes. They are prepared to execute orders for every description of Railroad Iron and Fixtures.

THE SUBSCRIBERS ARE PREPARED TO
execute orders at their Phoenix-Works for Railroad Iron of any required pattern, equal in quality and finish to the best imported.

REEVES, BUCK & CO.,

Philadelphia.

ROBERT NICHOLS, Agent,

No. 79 Water St., New York.

PATENT RAILROAD, SHIP AND BOAT

Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, Agent.

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand.

ja45

MANUFACTURE OF PATENT WIRE

Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by **JOHN A. ROEBLING, Civil Engineer,** Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Ships, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railroad, has now run 4 seasons, and is still in good condition.

2v19 1y

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN
Railroads, Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.

Our improved Spark Arrester have been extensively used during the last year on both passenger & freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendent Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendent Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburg and Jackson Railroad, Vicksburg, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. McKee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city or to Hinckley & Drury, Boston, will be promptly executed.

FRENCH & BAIRD.
N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.

Philadelphia, Pa., April 6, 1844.

••• The letters in the figures refer to the article given in the Journal of June, 1844.

ja45

PATENT HAMMERED RAILROAD, SHIP

and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Eting, Philadelphia; Wm. E. Coffin & Co. Boston.

ja45

MACHINE WORKS OF ROGERS,

Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

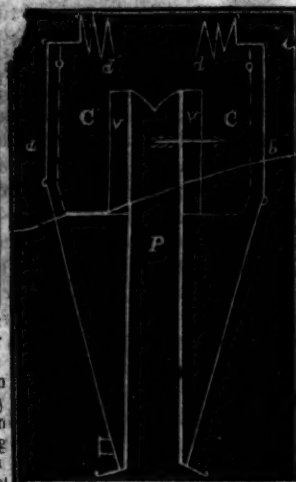
Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

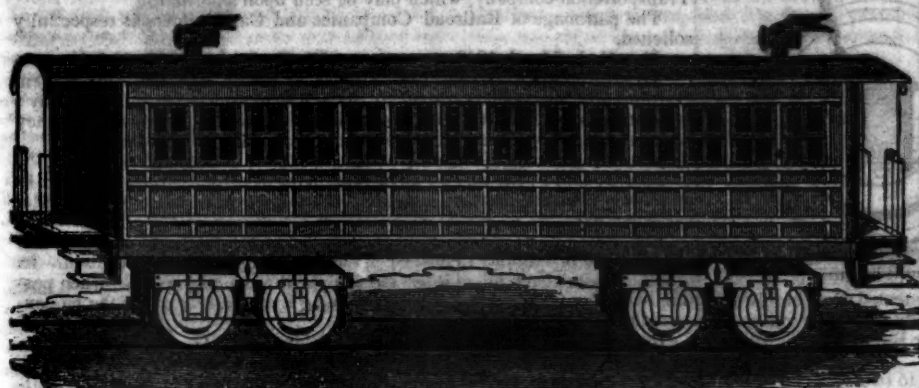
ROGERS, KETCHUM & GROSVENOR,

Paterson, N. J., or 60 Wall street, N. York.



DAVENPORT & BRIDGES'

CAR WORKS, CAMBRIDGEPORT, MASS.

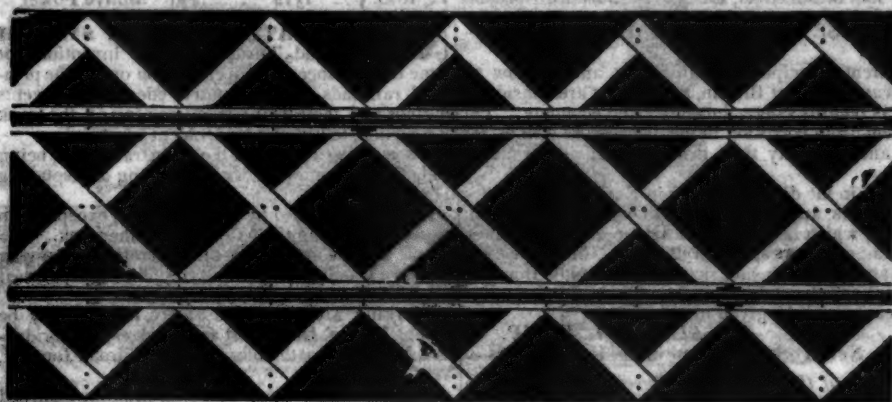


Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes.

THE HERRON RAILWAY TRACK,



As seen stripped of the top ballasting

A GOLD MEDAL AWARDED THE INVENTOR BY THE AMERICAN INSTITUTE.

THE UNDERSIGNED RESPECTFULLY invites the attention of Engineers, and Railroad Companies, to some highly important improvements he has recently made in the Herron system of Railway structure. These improvements enable him to effect a very large reduction in the quantity of Timber, and cost of construction, without impairing the strength of the Track, or its powers of resisting frost, while they secure additional features of excellence in the Drainage and facility of making Repairs.

The above cut represents the "Herron Track" as it is laid on the Philadelphia and Reading, and on the Baltimore and Susquehanna Railroads. The intersection of the sills of the trallis are 5 feet from centre to centre, while in the new construction they are only 2½ feet. This renders the string piece unnecessary, thus removing the only objectionable feature found in the Track.

The result of experience has proved that all Tracks constructed with longitudinal timbers, such as mud sills, and more especially, the continuous bearing string pieces retain the rain water that falls between the Rails, which, being thus confined, settles along those timbers, and accumulating in quantity flows rapidly along them on the descending grades, washing out the earth from under the timber, and frequently causing large breaches in the embankments of the road. Whereas all water intercepted by the oblique sills of the trallis, is discharged immediately into the side ditches.

In the 5 foot plan, the Track occupies a Road bed nearly 11 feet wide, while the new construction takes

but 8 feet; the timber being more concentrated under the Rails. A block of hard wood, about 2 feet long and 15 inches wide, is introduced into a square of the trallis for the purpose of giving an additional, and effectual support to the joints of the Rails, which rest upon it. Should these joint blocks become chafed and worn by the working, and imbedding of the chairs, as is now the case on all Railroads, they can be readily replaced without any derangement of the timbers less liable to wear.

The following is a general estimate of its cost near the seaboard. In the interior it will be considerably less.

ESTIMATE OF THE PROBABLE COST OF ONE MILE.		
4,224 Timbers, 11 ft. long, 3 x 6 inches =	68,696 ft. b.m., at \$10 =	\$686 96
587 Oak joint blocks 2 ft. x 3 x 15 in. =	4,403 ft. b.m., at \$13 =	57 24
13,000 Spikes = 2,250 lbs. at 4½ cts =		101 25
Workmanship free of patent charge.....		600 00

Cost of one mile including the laying of the Rail.....\$1,445 45

He has made other important improvements, which will be shown in properly proportioned models, that give a much better idea of the great strength of the Track than a drawing will do.

Sales of the Patent right to all the distant States will be made on liberal terms.

JAMES HERRON.
Civil Engineer and Patentee.
No. 277 South Tenth St., Philadelphia.

LAP-WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,
FROM 1 1-4 TO 6 INCHES DIAMETER,
and

ANY LENGTH, NOT EXCEEDING 17 FEET.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,

Patentee.

1725

28 Platt street, New York.

RAILROAD IRON.

MOUNT SAVAGE IRON WORKS

THIS Company are prepared to execute orders for Railroad Iron, of any pattern, and equal in point of quality to any other manufactured.

Address **J. M. HOWE**

Pres't. Mt. Savage Iron Works,
Dec. 25, 1y* Maryland.

ENGINEERS' AND SURVEYERS'

INSTRUMENTS MADE BY

EDMUND DRAPER,

Surviving partner of

STANCLIFFE & DRAPER.



No 23 Pear street,
1y10 near Third,

below Walnut,
Philadelphia.



THE SUBSCRIBER has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc.

ANDREW MENEELY.
West Troy, May 12, 1847. 1y*21

PIG AND BLOOM IRON.—THE SUBSCRIBERS are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Junata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,

12½ Vine St. Wharf, Philadelphia.

RAILROAD IRON.—THE "MONTGOMERY" Iron Company, Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to **MURDOCK, LEAVITT & CO.,**

1y48 77 Pine St., New York.

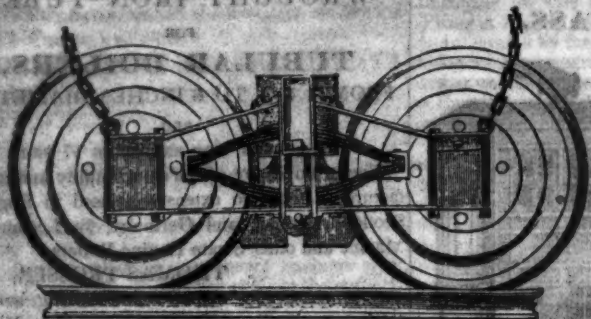
LAWRENCE'S ROSENDALE HYDRAULIC Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Floors and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by **JOHN W. LAWRENCE,**
149 Front street, New York.

Orders for the above will be received and promptly attended to at this office. 321y

RAY'S EQUALIZING RAILWAY TRUCK.—THE SUBSCRIBER

having recently formed a business connection in the City of New



York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East

ENGLISH PATENT WIRE ROPES—FOR THE USE OF MINES, RAILWAYS, ETC.—

for sale or imported to order by the subscriber. These Ropes are manufactured on an entirely different principle from any other, and are now almost exclusively used in the collieries and on the railways in Great Britain, where they are considered to be greatly superior to hempen ones, or iron chains, as regards safety, durability and economy. The plan upon which they are made effectually secures them from corrosion in the interior, as well as the exterior of the rope, and gives a greater compactness and elasticity than is found in any other manufacture.

Many of these ropes have been in constant operation in the different mines in England, and on the Blackwall and other inclined planes, for three and four years, and are still in good condition.

They have been applied to almost every purpose for which hempen ropes have been used—mines, heavy cranes, standing rigging, window cords, lightning conductors, signal halyards, tiller ropes, etc. Reference is made to the annexed statement for the relative strength and size. Testimonials from the most eminent engineers in England can be shown as to their efficiency, and any additional information required respecting the different descriptions and application will be given by

ALFRED L. KEMP,

75 Broad street, New York, sole agent in the United States.

Statement of Trial made at the Woolwich Royal Dock Yard, of the Patent Wire Ropes, as compared with Hempen Ropes and Iron Chains of the same strength.—October, 1841.

WIRE ROPES.			HEMPEN ROPES.			CHAINS.		STRENGTH
Wire gauge number.	Circumference of rope.	Weight per fathom.	Circumference of rope.	Weight per fathom.		Weight per fathom.	Diameter of iron.	
	INCH.	LBS. OZ.	INCH.	LBS. OZ.		LBS.	INCH.	Tons.
11	4½	13 5	10	24 -		50	15-16	20
13	3½	8 3	8½	16 -		27	11-16	13½
14	3½	6 11	7½	12 8		17	9-16	10½
15	2½	5 2	6½	9 4		13½	1-2	7½
16	2½	4 3	6	8 8		10½	7-16	7

N.B. The working load, with a perpendicular lift, may be taken at 6 cwt. for every lb. weight per fathom, so that a rope weighing 5 lbs. per fathom would safely lift 3360 lbs., and so on in proportion. 1v24

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicott's Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT.

Factory, 9th street, near Cones, cor. Melon st. Office, No. 3 North 5th street, Philadelphia, Pa.

1v23

THE SUBSCRIBERS, AGENTS FOR

the sale of Codorus, Glendon, Spring Mt and Valley, Pig Iron.

Have now a supply, and respectfully solicit the patronage of persons engaged in the making of Machinery, for which purpose the above makes of Pig Iron are particularly adapted.

They are also sole Agents for Watson's celebrated Fire Bricks and prepared Kaolin or Fire Clay orders for which are promptly supplied.

SAM'L KIMBER & CO.,

59 North Wharves,

Jan. 14, 1846. [1v4] Philadelphia, Pa.

RAILWAY IRON.—THE BEST QUALITY

of English Heavy H Rails—60 lbs. to the yard—now in store, landing from the vessel, and on ship board to arrive, for sale on most favorable terms by

DAVIS, BROOKS & CO.,

Jan. 2. [1v] 68 Broad St., New York.

river, (of which firm the subscriber was late a partner) under the immediate supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846.

W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the best and most economical truck now in use.

[Signed,]

WILLIAM ROE, Sup't of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845.

[Signed,] G. A. NICOLL,

Sup't Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use.

[Signed,] T. L. SMITH,

Jersey City, November 4, 1845. N. Jersey Railroad and Transp. Co.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car. For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

Long Island Railroad Depot,

[Signed,] JOHN LEACH,

Jamaica November 12, 1845. } 1v19

Sup' Motive Power

NICOLL'S PATENT SAFETY SWITCH

for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee G. A. NICOLLS, Reading, Pa.

TO RAILROAD COMPANIES AND MANUFACTURERS OF RAILROAD MACHINERY.

The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double-refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE, a45 N. E. cor. 12th and Market sts., Philad., Pa.

RAILROAD IRON.—THE NEW JERSEY

Iron Company, Boonton, N. J., are now making Railroad Bars, and are prepared to execute orders for any required pattern. Apply to

FULLER & BROWN, Agents,

No. 139 Greenwich, corner of Cedar street.

June 1, 1847.

10v

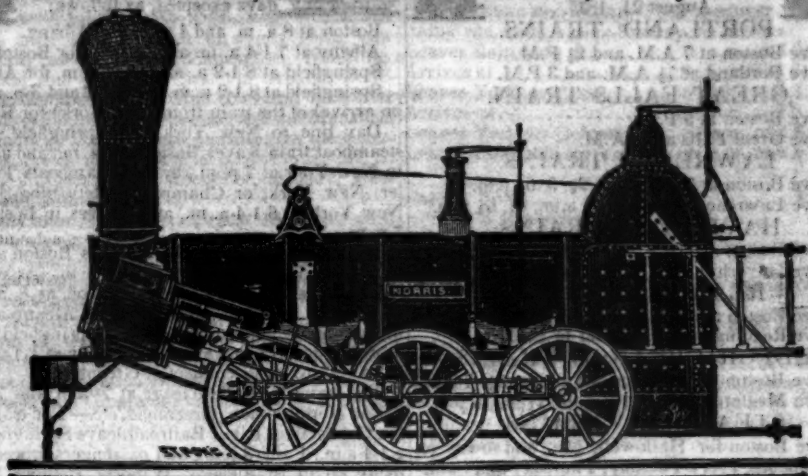
RAILWAY IRON.—DAVIS, BROOKS

& Co., No. 68 Broad Street, have now in port on Ship-board, 200 Tons of the best English heavy H Rails, 60 lbs. to the lineal yard, which they offer for sale on favorable terms, also, about 6 to 700 Tons now on the way, to arrive shortly, of the same description of Rail.

46v

NORRIS' LOCOMOTIVE WORKS.

BUSH HILL, PHILADELPHIA, Pennsylvania.



MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15 inches Diameter of Cylinder,	× 20 inches Stroke.
"	2,	14	" × 24
"	3,	14½	" × 20
"	4,	12½	" × 20
"	5,	11½	" × 20
"	6,	10½	" × 18

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion. Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

NORRIS, BROTHERS.

KEARNEY FIRE BRICK. F. W. BRINLEY, Manufacturer, Perth Amboy, N. J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, 4 mos. from delivery of brick on board. Refer to

James P. Allaire, }
Peter Cooper, } New York.
Murdock, Leavitt & Co. }
J. Triplett & Son, Richmond, Va. }
J. R. Anderson, Tredegar Iron Works, Richmond, Va. }
J. Patton, Jr. } Philadelphia, Pa.
Colwell & Co. }
J. M. L. & W. H. Scovill, Waterbury, Conn. }
N. E. Screw Co. } Providence, R. I.
Eagle Screw Co. }
William Parker, Supt. Bos. and Worcester R. R. }
New Jersey Malleable Iron Co., Newark, N. J. }
Gardner, Harrison & Co. Newark, N. J. }
25,000 to 30,000 made weekly. 35.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
445 President of the Newcastle Manuf. Co.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by
A. & G. RALSTON,
4 South Front St., Philadelphia.

VALUABLE PROPERTY ON THE MILL Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 18,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, lace, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 ft. with lathes, work benches, Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, turnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45 feet two stories high, with a shed part 45x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 64x26 feet.

Also—A lot of land on the canal, west side of Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia.

TO LOCOMOTIVE AND MARINE ENGINE BOILER BUILDERS. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by

MORRIS TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut Sts., Philadelphia.

PATENT INDESTRUCTIBLE WATER

Pipes. The subscribers continue to manufacture the above PIPES, of all the sizes and strength required for City or Country use, and would invite individuals or companies to examine its merits. This pipe, unlike cast iron and lead, imparts neither color, oxide or taste, being formed of strongly riveted sheet iron, and evenly lined on the inside with hydraulic cement. While in the process of laying, it has a thick covering externally of the same—thus forming nature's own conduit of stone. The iron being thoroughly enclosed on both sides with cement, precludes the possibility of rust or decay, and renders the pipe truly indestructible. The prices are less than those of iron or lead. We also manufacture Basins and D. Traps, for Water Closets, on a new principle, which we wish the public to examine at 112 Fulton street, New York.

J. BALL & CO.

CONNECTION BETWEEN THE BOSTON and Lowell and the Boston and Maine Railroads. On and after April

1st, 1847, passenger trains will run as follows, viz:

Leaving Lowell at 7:11 1-4 a.m., and 2 1-2, 4 1-2, and 6 1-2 p.m., to connect at the junction in Wilmington with the eastward trains—at 7 a.m. and 2 1-2 p.m. with those to Portland; at 4 1-2 p.m. to Great Falls only, with a detention of 45 minutes at the junction, and at 11 1-4 a.m. and 6 1-2 p.m. to Haverhill only. Leaving the junction in Wilmington, for Lowell, at about 7 1-4 a.m. on arrival of the morning train from Haverhill; at about 9 a.m., on arrival of the morning trains from Great Falls. At about 11 3-4 a.m., on arrival of the morning train from Portland. At about 5 p.m. on arrival of the afternoon trains from Haverhill. At about 7 1-4 p.m., on arrival of the afternoon train from Portland.

WALDO HIGGINSON, Agent.

WESTERN RAILROAD.—ON AND AF-

ter Monday, April 5, 1847, the passenger
trains will leave daily. Sun-

Boston at 8 a. m. and 4 p. m. for Albany.

Albany at 7 1-4 a. m. and 5 p. m. for Boston.
Springfield at 8 1-2 a. m. and 1 p. m. for Albany.

Day line to New York, via Springfield.—The steamboat train leaves Boston at 6 a. m., and arrives in New York at 7 p. m., by the steamboats Traveler, New York, or Champion. Returning, leaves

Albany and Troy.—Leave Boston at 8 a. m., and arrives in New York at 6 1-4 a. m., and arrives in Boston at 7 p. m.

Springfield at 1 p. m., and arrive in Albany at 6 p. m.; or, leave Boston at 4 p. m., Springfield next morning at 8 1-2 and arrive in Albany at 1 1-2 p. m.

The Troy trains connect at Greenbush.
The trains for Buffalo leave at 7½ a.m. and 7 p.m.
For Northampton, Greenfield etc.—The trains of

the Connecticut River Railroad leave Springfield at 8-14 a.m., 1 and 3 p.m., and passengers proceed directly on to Braintree, Windsor, Bellows Falls, Walpole, Hanover, Haverhill, etc.

For Hartford.—The trains leave Springfield on

The trains of Pittsfield and North Adams Rail-

road leave Pittsfield on the arrival of the trains from Boston.

N. B.—No responsibility assumed for any baggage by the passenger trains, except for wearing apparel not exceeding the value of fifty dollars, unless by special agreement.

JAMES BARNES, Sup't and Eng'r.
C. A. SEAD, Agent, 27 State street, Boston.

NEW YORK AND ERIE RAILROAD LINE

SUMMER ARRANGEMENT. For passengers, twice each way daily, July 1 to September 1.

(except Sunday,) leave New York from the foot of Duane St. at 7 o'clock, A. M. and at 4 o'clock, P. M. by steambomb, for Piermont,

The return trains for New York will leave Otis-

ville at 6 30, A. M. and 4 15, P. M.; Middletown at 7 A. M. and 4 40, P. M.; Goshen at 7 22, A. M. and 5 3, P. M.; Chester at 7 35, A. M. and 5 18, P. M. Fare between New York and Otisville, \$1 50; way-fare in proportion.

FOR MILK—Leave Otisville at 5½ o'clock, morning and evening.

For Freight—The barges "Samuel Marsh and "Henry Suydam, Jr." will leave New York (from

the foot of Duane St.) at 5 o'clock, P. M. daily (except Sundays.)
No freight will be received in New York after

Freight for New York will be taken by the trains leaving Otisville at 10½ o'clock, A. M.; Middletown

at 11 $\frac{1}{2}$ A. M.; Goshen at 12 $\frac{1}{2}$ P. M.; Chester at 1 o'clock, P. M., etc., etc.

For farther particulars, apply to J. F. CLARKSON, Agent, corner of Duane and West Sts., New York, or to S. S. POST, Superintendent Transport-

H. C. SEYMOUR, Sup't.

G Washington city, Richmond, Petersburg, Wel-
don and Charleston, S. C., direct to New Orleans.
The only Line which carries the Great Southern
Mail, and Twenty-four Hour in advance of Bay
Line, leaving Baltimore daily.

Passengers leaving New York at 4½ P.M., Philadelphia at 10 P.M., and Baltimore at 6½ A.M., pro-

ceed without delay at any point, by this line, reaching Richmond in *eleven*, Petersburg in *thirteen and a half hours*, and Charleston, S. C., in *two days* from

Fare from Baltimore to Charleston.....	\$21 00
" " " Richmond.....	6 60

For Tickets or further information apply at the

For Ticket, or further information, apply at the Southern Ticket Office, adjoining the Washington Railroad Office, Pratt street, Baltimore, to

ly14 STOCKTON & FALLS, Agents.

...and from New York. ... 251

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for 1847.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 42 A. M.

Fares. Miles. No. 1. No. 2.
Between Phila. and Pottsville, 92 \$3.50 and \$3.00

" " Reading, 58 2.25 and 1.90
" " Pottsville, 34 1.40 and 1.20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1847.

Summer Arrangement.

Philadelphia for Baltimore, 8 a.m. and 10 p.m.
Baltimore for Philadelphia, 9 a.m. and 8 p.m.

Connecting with Mail Lines North, South & West.

On Sundays, only the 10 P. M. Lines run.

The Boat Lines, via Newcastle & Frenchtown R.R. Leave Philadelphia at 3 p.m. No line on Sunday.

Leave Baltimore at 3 p.m. daily.

Accommodation Trains between Philadelphia & Wilmington, Philadelphia to Wilmington, 8 a.m., mail, 12 p.m., 4 p.m., 7 p.m., 10 p.m. mail. Wilmington to Philadelphia, 7 a.m., 1 p.m., mail, 4 p.m., 7 p.m., 12 a.m., night mail.

J. R. TRIMBLE,
Engineer and General Superintendent.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO DALTON, 100 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga.—28 miles from Chattanooga, Tenn.

Between August and Dalton, 271 miles. Between Charleston and Dalton, 408 miles.

RATES OF FREIGHT.

Between August and Dalton, 271 miles. Between Charleston and Dalton, 408 miles.

1st class. Boxes of Hats, Bonnets, and Furniture, per cubic foot. \$0 18 \$0 28

2d class. Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per 100 lbs. 1 00 1 50

3d class. Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc. 0 60 0 85

4th class. Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bail Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc. 0 40 0 65

Cotton, per 100 lbs. 0 45 0 7

Molasses, per hogshead. 8 50 13 50

" " barrel. 2 50 4 25

Salt per bushel. 0 18

Salt per Liverpool sack. 0 65

Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows. 0 75 1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,
Supt. of Transportation.

Augusta, Ga., July 15, 1847. 44*1y

RATES OF FREIGHT

On CHANDLER'S Through Transportation Line, between Charleston, S. C., or Savannah, Ga., and Decatur, Ala., and Knoxville, Tenn., and all intermediate points on the Tennessee River, viz:

Between Macon and Decatur and intermediate points. 0 32 1 54 1 05 0 81 0 86

and Knoxville & intermediate points. 0 32 1 54 1 10 0 76 0 80

and Chattanooga. 0 32 1 54 1 10 0 61 0 66

Between Augusta and Decatur and intermediate points. 40 24 1 70 1 15 0 85 0 90

and Knoxville & intermediate points. 40 24 1 70 1 20 0 80 0 85

and Chattanooga. 40 24 1 70 1 20 0 65 0 70

Between Charleston or Savannah and Decatur and intermediate points. 40 32 90 32 2 20 1 35 1 05 1 10

and Knoxville & intermediate points. 40 32 90 32 2 20 1 40 1 00 1 05

and Chattanooga. 40 32 90 32 2 20 1 40 1 00 0 85

1st class. Boxes of Hats, Bonnets and Furniture per foot.

2d class. Boxes and Bales of Dry Goods, Shoes, Saddlery, Glass, Paints, Oils, (in cans) Drugs, Confectionaries, Shovels, Spades, Scythes, Smiths, Bellows, Baskets, Tubs, Sifters, Brooms and other light articles, per 100 lbs.

3d class. Molasses, Sugar, Coffee, Liquor, Bagging, Rope, Cheese, Tobacco, Leather, Feathers, Hides, Wool, Copper, Tin, Sheet-iron, Nails, Casks, or Crates of Crockery, Hardware, and other heavy articles not enumerated below.

4th class. Flour, Bacon, (in casks or boxes) Pork, Beef, Lard, Tallow, Butter, Beeswax, Bales of Rags, Ginseng, Green and Dried Fruit, (in casks or sacks) Pig-iron and Linseed Oil, per 100 lbs.

Per 100 lbs. Cotton.

Merchandise shipped from any of the northern ports, must be consigned to R. R. AGENT, CHARLESTON, S. C., or R. R. AGENT, SAVANNAH, GA.: and every package must be marked, care of B. CHANDLER, Chattanooga.

Charges will accompany the goods, and be collected by the boats on the Tennessee river, when delivered to the owner or consignee.

No preference in the way of despatch, will be given to any produce intended for their line, but each lot will be sent off as it is received.

The warehouse of the undersigned will be enlarged during the summer, and an apparatus attached for hoisting or lowering freight to the river, without soil or injury.

He will have a train of wagons under his entire control, sufficient to conduct the fall business with great despatch.

B. CHANDLER.
Chattanooga, Tenn., July 1, 1847.

REGULAR RATES BETWEEN ATLANTA AND CHARLESTON OR SAVANNAH.

First class, per foot. \$0 20

Second class, per 100 lbs. 1 20

Cotton, per 100 lbs. 0 55

Third class, per 100 lbs. 0 60

Fourth class, per 100 lbs. 0 50

FRANKLIN HOUSE.

No. 105 Chestnut Street, Philadelphia.

The undersigned takes the liberty of calling the attention of the readers of the Journal to the fact that the Office is removed from New York to the FRANKLIN HOUSE, Philadelphia, where he will be always

pleased to meet and greet them. They will not only find a pleasant Reading Room, with lots of foreign

periodicals, treating of Railroads and Machinery, but they will always find good-sized and airy rooms—

clean beds—and a well supplied table. If they would have further proof of this, they have only to call,

and judge for themselves, and much oblige the proprietor.

D. K. MINOR.

BOUND VOLUMES.

Volumes of this Journal, for the Years 1838 to 1846, INCLUSIVE, may be had Bound, at Subscription Price, on application at this Office.

One or two COMPLETE SETS of the RAILROAD JOURNAL may be had in a few weeks—or as soon as two numbers can be reprinted—by application to the Editor.

ENGINEERS and MACHINISTS.

THOMAS PROSSER, 28 Platt St. N. Y. (See Adv.)

J. F. WINSLOW, Albany Iron and Nail Works Troy, N. Y. (See Adv.)

TROY IRON AND NAIL FACTORY, H. Burden, Agent. (See Adv.)

ROGERS, KETCHUM & GROSVENOR, Paterson, N. J. (See Adv.)

S. VAIL, Speedwell Iron Works, near Morristown, N. J. (See Adv.)

NORRIS, BROTHERS, Philadelphia Pa. (See Adv.)

FRENCH & BAIRD, Philadelphia. (See Adv.)

NEWCASTLE MANUFACTURING COMPANY, Newcastle, Del. (See Adv.)

ROSS WINANS, Baltimore, Md.

CYRUS ALGER & Co., South Boston Iron Co.

SETH ADAMS, Engineer, South Boston.

STILLMAN, ALLEN & Co., N. Y.

JAS. P. ALLAIRE, N. Y.

PHENIX FOUNDRY, N. Y.

ANDREW MENEELY, West Troy.

JOHN F. STARR, Philadelphia, Pa.

MERRICK & TOWNE, do.

HINCKLEY & DRURY, Boston.

C. C. ALGER, Stockbridge Iron Works Stockbridge, Mass.

AMERICAN RAILROAD JOURNAL.

OFFICE AT THE FRANKLIN HOUSE,

105 Chestnut Street,

PHILADELPHIA, PA.

This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the

notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages

for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron,

timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of

new undertakings fairly before the public.

TERMS.—Five Dollars a year, in advance.

RATES OF ADVERTISING.

One page per annum. \$125 00

One column " 50 00

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One square " 2 50

One page, single insertion. 8 00

One column " " 3 00

One square " " 1 00

Professional notices per annum. 5 00